PHSB STUDIES

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ASSOCIATIONS BETWEEN NUTRITION AND MORTALITY IN SIX HEALTH SERVICE AREAS OF NORTH CAROLINA

(An Indirect Study)

In recent years, considerable attention has been given to studies relating disease processes to various elements of human consumption. These studies have experimentally implicated a number of products including cyclamates, food dye and saccharin. In addition, various studies have related basic foodstuffs to disease processes; for example, the high cholesterol content of eggs has been implicated as a factor in cardiovascular disease. Still other recent reports point to the role of diet in various forms of cancer.

A recent PHSB study (1) suggests that occupational distribution contributes significantly to the explanation of death from acute myocardial infarction, lung cancer and prostatic cancer; in addition, that income is explanatory for lung cancer; education for colon-rectum cancer; and elevation for acute myocardial infarction and prostatic cancer. The question is, what do these variables represent. . . . Is diet an important factor?

Fortunately, North Carolina is in the position of having conducted a survey that provides dietary data for a representative sample of the household population (2,3). Although that survey was conducted seven years ago, and time and circumstance have undoubtedly modified eating behavior to some extent, we believe the data are still useful indicators of the relative dietary habits of different areas of the state and, in any event, that they afford us the unique opportunity to examine associations between prior dietary practice and current mortality in North Carolina.

The present study uses correlation analysis to examine dietary factors that might be affecting age-race-sex-adjusted mortality in the state's six health service areas (HSA's), these being the smallest areas for which survey data are available. In these analyses, intercorrelations among per capita income, a contrived elevation variable and nutrition factors are also examined. Although the previously cited study (1) and other investigations tend to support the hypothesis of a protective effect of altitude upon heart function, dietary factors may be the protective agent in North Carolina.

METHODS AND MATERIALS

Dietary Data

The North Carolina Nutrition Survey (NCNS) was originally designed to provide dietary data for only three regions of the state--the East, the Piedmont, and the West (2). However, in terms of the number of households for which dietary data were obtained, each of the HSA's appears sufficiently represented to allow for the post-stratification used in this paper. Table 1 compares the percentage distributions of responding survey households and household members to the corresponding distributions obtained in the April 1970 Census.

Details concerning the survey design and procedures have been reported (2). Briefly, the data were collected by trained nutritionist-interviewers from an adult household member who had responsibility for meal preparation. This person was asked